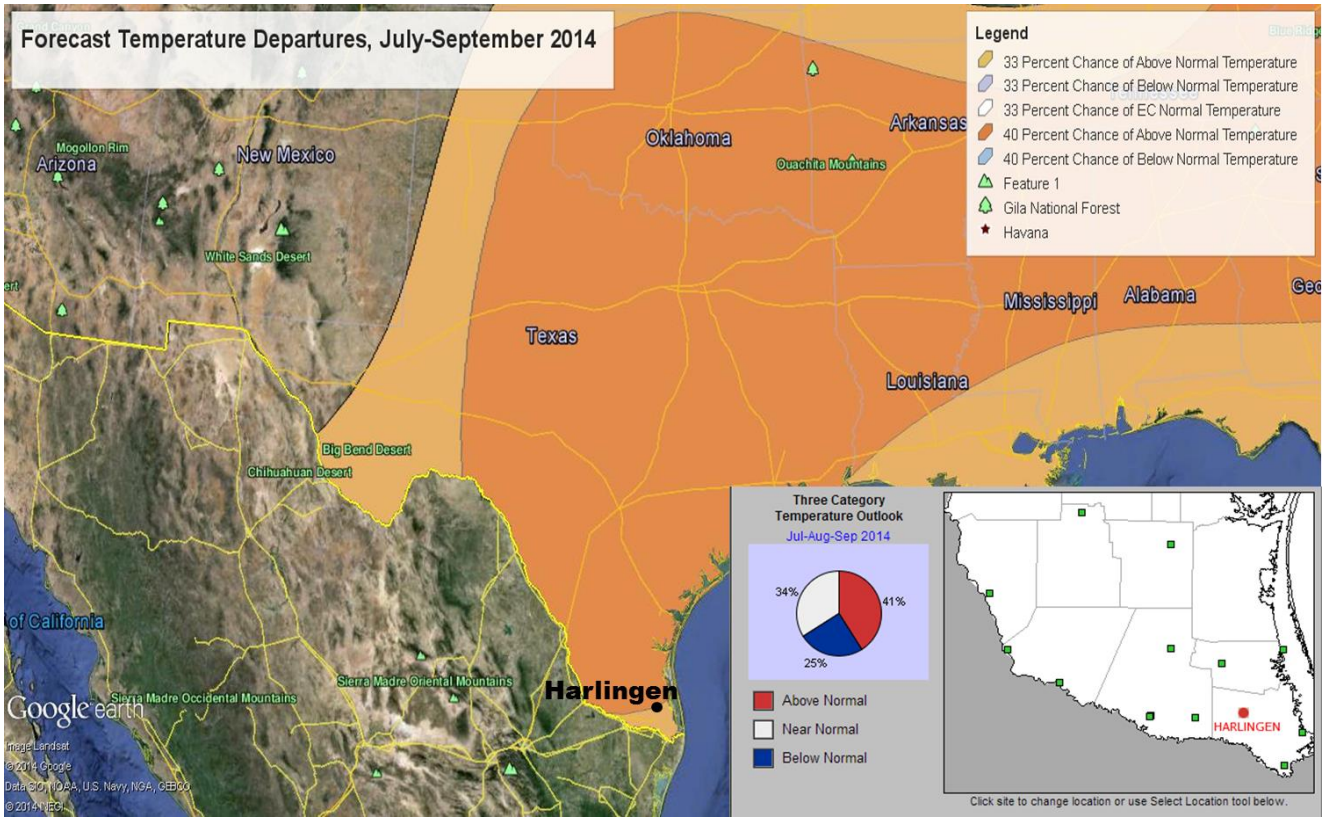
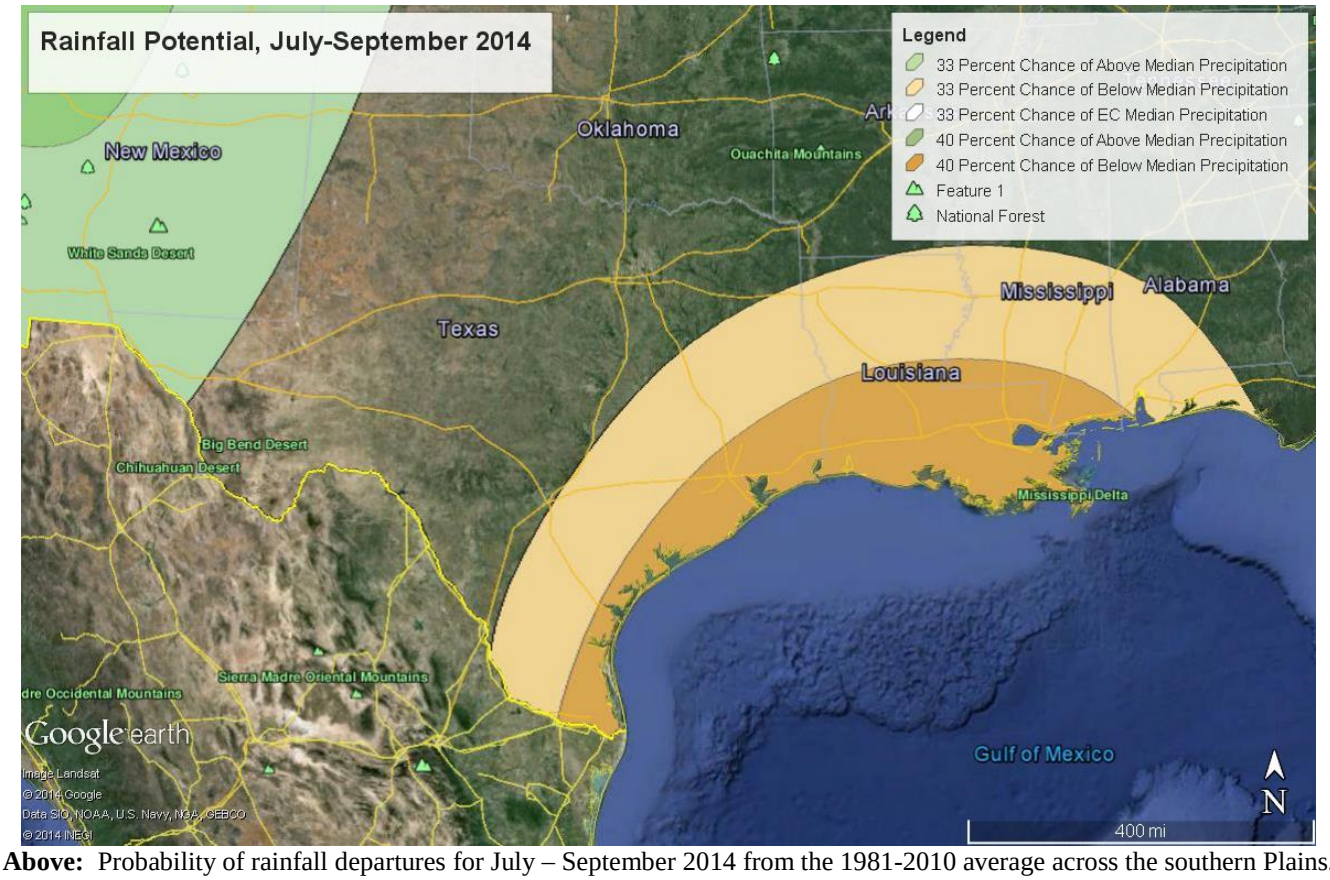
Late Summer 2014 Outlook



Above: Forecast temperature departure (probability) for July through September 2014. Pie chart (inset) indicates specific probabilities of above (red), "normal" (white), and below (dark blue) average for Harlingen. July-September average temperatures in the mid-80s, with afternoon values in the 90s and early morning values in the mid to upper 70s.



Above: Probability of rainfall departures for July – September 2014 from the 1981-2010 average across the southern Plains. "Normal" rainfall for the July-September period ranges from 8 to 10 inches across the Rio Grande Valley/Deep S. Texas.

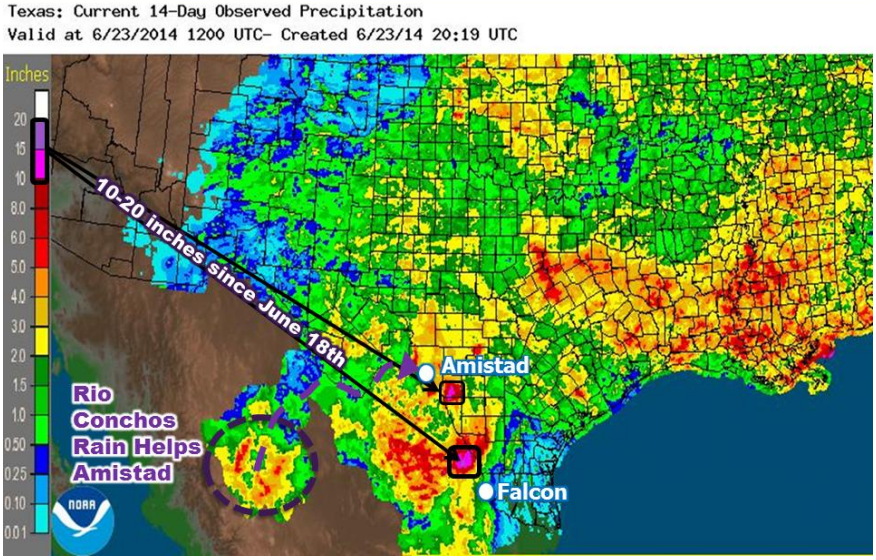
July-September 2014 Outlook for the RGV: Hot, or Not?

Long Term Trends, El Niño Suggest so, but Short Term Trends Less Sure

Overview

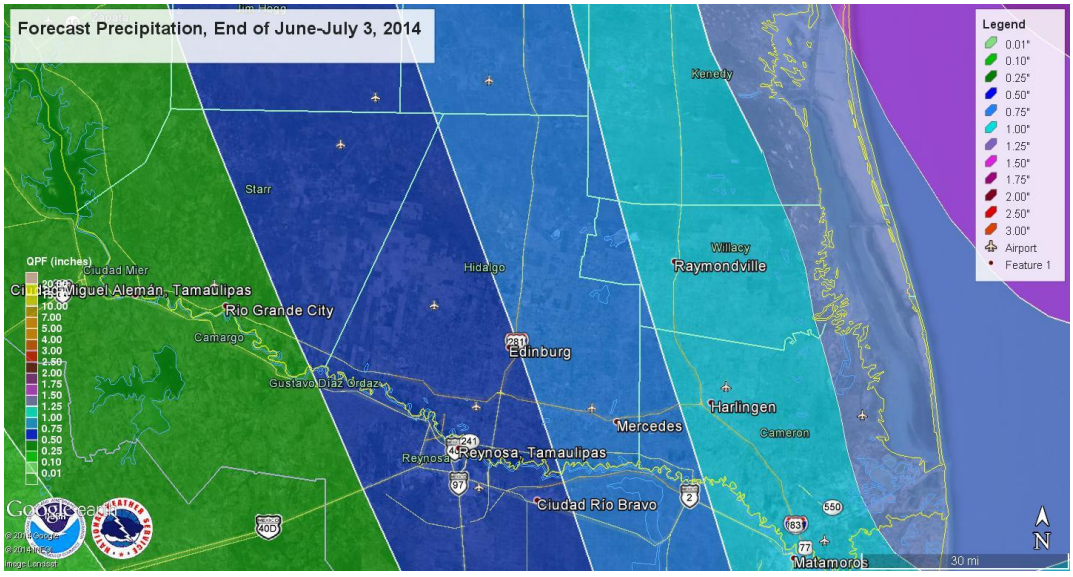
After a few periods of helpful rains on May 9th and again on the 27th and 28th, June (through the 23rd) lived up to its billing as a dry and relatively hot (temperatures generally 1 to 2°F above average) month, right in line with the expected outlook for June through August 2014. Rainfall for nearly the entire region was less than 0.10 inch, well below the average of around 2" inches through the 23rd.

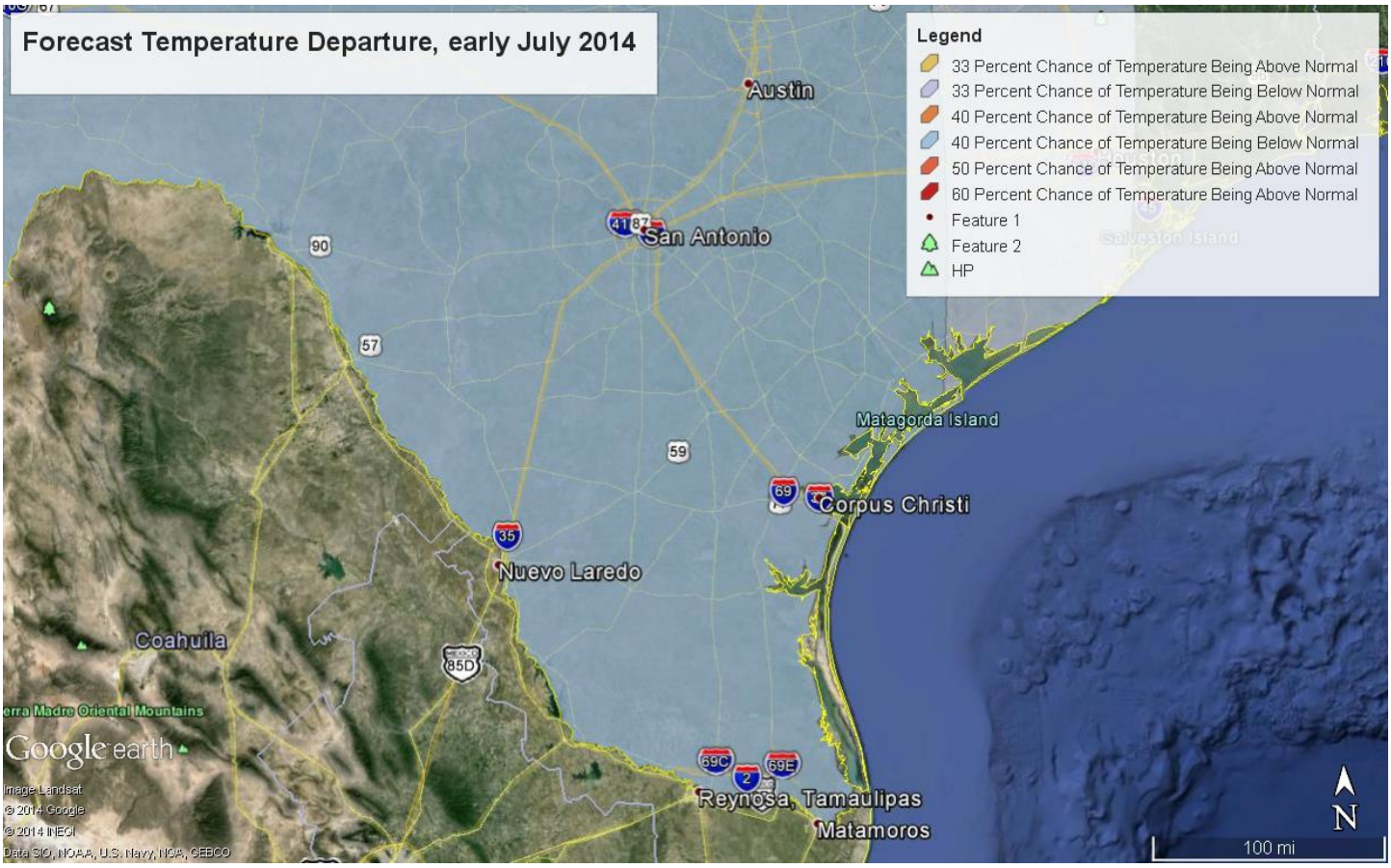
Helpful Rains Perk Up Reservoirs

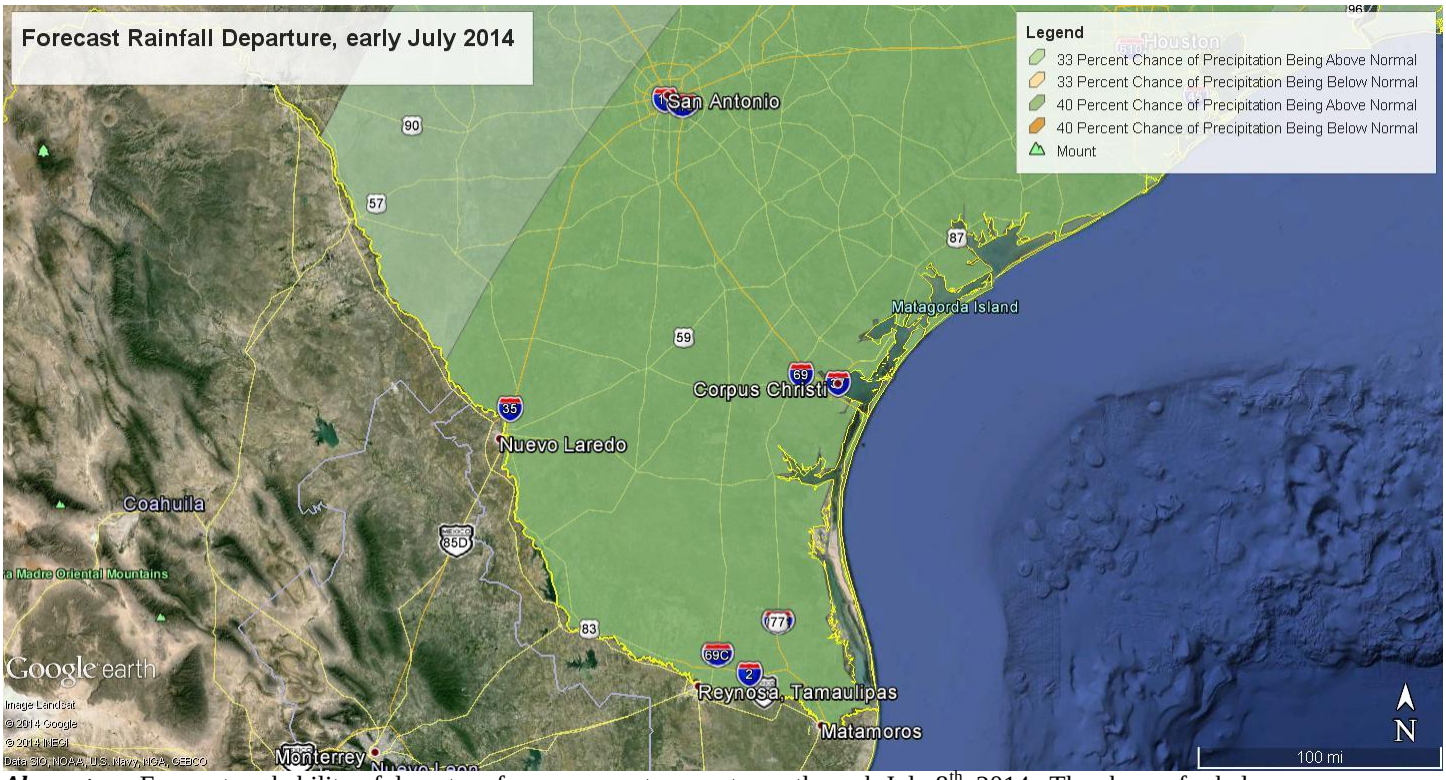


Despite these conditions, which fell in line, changes were afoot in the general weather pattern. A persistent, weak upper level trough separated dry air from what had been a persistent, early arriving "La Canícula" ridge across north central Mexico and a humid subtropical ridge across the southeast U.S. during the week of June 16th; the trough activated torrential rain-producing thunderstorms from the Sierra Madre Oriental and locations in the Mexican portion of the Rio Grande basin (Rio Conchos and Rio Salado, as well as the Rio Grande between Del Rio and Laredo) which pushed waters into both Amistad and Falcon International Reservoirs (above). Coincidentally, the torrential rains fell just a few days later than in 2013 (June 14th vs. June 18th/19th) , when more than 17 inches fell near Eagle Pass and sent a flood wave down river which also provided a short lived boost to Falcon Dam. On June 25th, levels at Falcon had risen to 31.4 percent (Texas share; 486,751 acre feet of conservation), slightly higher than the level on June 25th, 2013 (29.4 percent, 456,550 acre-feet). Amistad's influx of rain pushed their levels to 54.5 percent (1,002,456 acre-feet), well above the levels of June 25th, 2013 (37.1 percent, or 683,128 acre-feet).

Scattered showers and thunderstorms arrived in the Rio Grande Valley on June 24th, bringing down temperatures and providing the start of some welcome rainfall, which had the potential to keep drought conditions in check through the end of June (below).







Above, top: Forecast probability of departure from average temperatures, through July 8th 2014. The chance for below average temperature was 40-49%; assuming a 33% probability for "normal", a much less chance (18-27 percent) for below normal. ***Above, bottom***: The same idea, only for precipitation – also a 40-49 percent chance for above average. Early July average rainfall is around 0.5 to 0.75".

How Will July Fare?

Analogue years when El Niño developed rapidly during spring and early summer, temperatures trended above average and rainfall trended below average. Such may not be the case for the first third of July, as a pattern of moderate to deep tropical moisture, supplied by easterly waves and/or "old" upper level disturbances, could bring more welcome rain to the entire region and favor the coastal counties (Cameron, Willacy, Kenedy) with the higher rainfall. Beyond then, uncertainty has increased for the final outcome of July, with the potential for dryer and hotter conditions to resume during the climatologically favored period for such outcomes (mid-July through mid-August, or the "Dog Days of summer").

Some of the difficulty lies in the development of somewhat unexpected short-range (one to two week) weather patterns combined with a favorable Madden-Julian Oscillation phase expected to prevail into early July. A second concern is a potential "hiccup" in the development of a full-fledged El Niño; recent trends and some models are now forecasting a brief dip in the "warm phase" to below the 0.5° index level for July (below, top), which would have been the necessary third consecutive month reaching the benchmark to officially christen the expected El Niño.

And the Rest of Summer into September?

Assuming the July dip is temporary, and the expected forecast of weak to moderate El Niño conditions resume in earnest by August and September (below, bottom), periods of hot and dry weather *could* become more dominant and, overall, the tropics would remain fairly quiet as the peak of the Atlantic season approaches. This does not account for potential development in the western Caribbean Sea or southwest Gulf of Mexico, and another favorable Madden-Julian Oscillation phase could reappear later in August and early September. Remember, it only takes one storm to form in a favorable pattern, as Andrew (1992, seven named storms, one major hurricane) and Beulah (1967, six named storms, one major hurricane) remind us. Stay tuned, and stay cool!